In the Drawings

Replacement drawings of Figure 6 is enclosed herewith in which Figure 6 has been amended to show a second pair at a position spaced from the first pair and these are designated 9A and 10A. A copy of the original figure is enclosed for the Examiner's convenience.

REMARKS:

The Examiner sets out in paragraph 4 of the Official Action a rejection under 35 U.S.C. 112 which indicates that unfortunately there is a misunderstanding as to the operation of the invention.

The Examiner appears to understand that the staples or "dual prong design" of the probes are applied through the conductors in a direction such that one prong engages into one conductor and the other prong engages into the other conductor. This arrangement of course shorts out the conductors so that the plurality of such staples along the length of the conductors acts to apply parallel short circuits across the conductors. Such an arrangement would be completely unresponsive to the presence of moisture since the moisture would not increase the current flowing across the conductors since that current is effectively always the maximum created by a dead short across the conductors. This cannot be the construction disclosed, as the Examiner clearly appreciates, since he indicates that this cannot work. The Examiner's interpretation of the specification cannot therefore be correct.

Figure 6 as originally filed (not as now amended) clearly shows a pair or probes (identified in the original drawings as "moisture probes").

As stated in the specification:

"***Referring to Figure 5, when the tape is installed on a moisture absorbent building element, for example wood, moisture probes (9), (10) are inserted through the detection tape conductors at critical point-locations. The probes are constructed of stainless or copper-clad steel. The probes are of a dual prong design as illustrated in Figure 4 and can be inserted with a standard***

construction-stapling tool".

The above paragraph is in error in that it refers to Figure 5 when there is no tape shown in Figure 5. This has now been corrected to refer to Figure 6.

Probe 9 is shown in Figure 4 and comprises a staple having two legs and a bridge shown in elevation.

Probe 10 is shown in Figure 5 and comprises a staple shown in end elevation.

In Figure 6 as filed, it is fully clear that the staples shown and referred to as "moisture probes" have a bridge portion **extending along the conductor**. It is absolutely clear that the element illustrated does NOT have any component bridging across the two conductors. The Examiner's interpretation of the specification cannot therefore be correct.

The Examiner alleges in the advisory action that "the term 'probe' and 'prong' are used interchangeably". This is not correct. The passage in question reads as follows:

"***The probes are of a dual prong design as illustrated in Figure 4 and can be inserted with a standard construction-stapling tool.***" The proper understanding of this sentence is that "each probe is of a dual prong design", that is each probe is a staple and has two prongs.

It is, therefore, fully clear that the probes are arranged in pairs at spaced positions along the conductors. Each probe can comprise a staple. Thus each pair of probes comprises a first staple and a second staple. However both prongs of the first staple are driven into the first conductor and both prongs of the second staple are

driven into the second conductor. Thus the probes of each pair are electrically separated and thus the conductors are responsive to moisture running across the surface of the absorbent material (as detected by the conductors) and to moisture within the material (as detected by the probes).

This construction is made clear in Figure 6 where the two conductors are shown. Also a single pair of "moisture probes" is shown. Thus each conductor is penetrated by a staple (probe) forming a respective one of the pair of probes with the bar or bridge of the staple running along the respective conductor so that each prong of the staple penetrates the SAME conductor.

At page 6, line 15 is stated " ***The electrical resistance between the probes, which are inserted parallel to one another in the two flat conductors, varies in proportion to the moisture content in the wood material.*** "

Thus this sentence makes fully clear that each probe 9 and 10 is of dual prong design and is formed by a staple. The first staple (probe 9) and second staple (probe 10) are inserted parallel to one another with the first in the first conductor and the second in the second conductor respectively. Figure 6 makes clear that the probes (staples) are parallel to one another with extending longitudinally in the conductor.

In this way the electrical resistance between the probes varies in proportion to the moisture content in the wood material.

It will be noted that the above quoted portion of the description states that " ***the probes ... are inserted parallel to one another in the two flat conductors***" and does **not** state that the probes are parallel to one another **across**

the two flat conductors.

Amendment to the drawings

While the Examiner has not objected that the claims include subject matter not illustrated, it is noted that the figures only show a single pair of moisture probes 9 and 10. Thus Figure 6 has been amended to show a second pair at a position spaced from the first pair and these are designated 9A and 10A. A minor amendment has been made in the description to refer to these reference numerals.

The sentence of the Examiner which states:

"***As to the argument concerning each probe comprising a staple and each pair of probes comprises a staple, with both prongs of the second staple driven into the second conductor, these limitations do not seem to be claimed.***" This does not appear to make sense. However it is pointed out that each probe can be a staple, as set out in the description of the preferred embodiment; but each probe does not have to be a staple. That is each probe can simply be "***a conductive element of corrosion resistant material***" (see page line 15).

Also the original claim 7 made clear that it is optional that the probe be a staple wherein is stated:

" ***7. A sensor according to Claim 6 wherein each moisture probe comprises a substantially U-shaped metal element***". That is the probe may optionally be a U-shaped element or staple. However it can also be any other conductive element such as a nail or pin.

For this reason there is no limitation in the claims as to the probe being a staple and no requirement that the claims be so limited.

Amendment to the claims

Based on the above explanation of the operation of the disclosure, it is believed that it is now clear that the feature previously added of "***wherein the probes of each pair are electrically separated each from the other***" is a correct and proper explanation of the construction. However in view of the rejection, this features has now been deleted and has been replaced by the feature that "***and so as to detect changes in electrical resistance between the probes, caused by moisture content within the absorbent material***". This, as explained above, requires that the probes are separate so that they do not generate a short circuit across the conductors and the resistance between them varies. These words now added are taken substantially verbatim from the above quote from page 6, line 15.

In addition Claims 12 and 21 have been amended to state "***A method of detecting moisture in within and on a surface of an absorbent material***".

It will be appreciated from page 3, line 22 and from page 5, line 2 to 4 and from page 6, line 4 to 5 that the system, as defined in Claims 12 and 21, provides two detection systems which measure moisture on the surface and moisture within the material. This dual measurement system has now been made clear since the original claim referred to moisture "in the absorbent material" as pointed out by the Examiner.

In addition Claims 12 and 21 have been amended to state "***wherein each probe includes at least one rigid elongate conductive element of a corrosion resistant material***". It is clear from the specification as originally filed that, while the use of staples is clearly not essential, each staple includes "at least one

conductive element ..." or prong.

Thus it is submitted that Claims 12 and 21 are now clear and clearly define that the probes are separate and inserted each into (or to engage with) a respective one of the conductors.

It is submitted that it is fully clear that each probe may be a staple with two prongs or may be another conductive element which has only a single prong (or three prongs or four prongs) since the construction or shape of the probe is not part of this invention.

Prior Art Rejections

With regard to the rejection under 35 U.S.C. 103, the Examiner has cited Stewart, Gott and "Contractors Depot Stainless Staples".

Neither Stewart nor Gott disclose any probes which the Examiner well appreciates. In order to overcome this deficiency, the Examiner cites "Contractors Depot Stainless Stapes" (CDSS). This however merely discloses the existence of staples which are of course well known and Applicant does not in any way deny that such are known. As set forth above, the invention may also use pins of nails and or course it is admitted that such fasteners are well known and readily available.

The Examiner takes the position that, having determined that it is obvious to use staples or any other penetrating fastener to hold the tape in place, then it is obvious to place those staples (or fasteners) at any location. This is the best case position as there is simply no disclosure of where such staples should be located.

However it is submitted that such staples, if used to hold the tape in place, would absolutely NOT be used in the location set forth clearly in the claims,

that is, penetrating the conductors.

It is clearly fundamental in the field of electrical wiring that a person skilled in this art avoids penetrating the conductors with the mounting system. Any such penetration can cause many extraneous currents and short circuits. Electrical wiring, in order to meet code, is mounted with systems which clearly avoid a person inadvertently penetrating the conductor. Any such skilled person, taking a wire or electrical conductor system to be mounted, if using staples would ensure that such staples bridge the wire or attach to the wire in a manner which absolutely avoids contact with the conductors. Suitable staples in common wiring systems are of course readily available in sizes which ensure that the conductors of the wire (of many different gauges) are contained between the legs and against a bar or bridge which is generally designed or cushioned to prevent any possibility for the bar to cut or penetrate the wire.

In the Examiner's analysis of the matter, this standard procedure is ignored in that it is alleged that the installer will apply the staple at any location completely ignoring the presence of the conductors. This is of course contrary to common sense. Thus it is submitted that the skilled person would not use mounting staples, in view of the danger of interfering with the operation of the system to measure the low currents generated by moisture by providing inadvertent short circuits.

If a skilled person were to choose to use staples, it is submitted that such staples would be applied in a manner which would absolutely avoid the conductors or any connection with them. Such staples could be applied along the

edges of the tape outside and away from the conductors. Such a location would clearly avoid interfering with the currents across the conductors but would NOT be located in the locations necessary for the present invention.

There is simply no suggestion in the combination cited by the Examiner that the staples of Contractors Depot should be applied in this specific location now clearly defined and specified where the stapes (or other penetrating conductor) are located in pairs along the conductors.

The present invention is based on the analysis that a single pair of conductors can be used to measure in a meaningful way **BOTH** moisture on the surface of the absorbent material (typically wood) at positions along the length of the tape **and** moisture absorbed in the material at a plurality of positions along the tape. This requires a specific location of the components and an operation of the method. There is simply no suggestion in any of the prior art that such a system of elongate tapes and multiple probe positions will provide a valuable measure of moisture in the material.

This is not merely random penetration of mounting staples but requires the specific location of the probes within the conductors in a plurality of pairs.

In response to previously presented arguments, the Examiner suggests in paragraph 15 that the arguments presented suggested that the invention relates to an improved method of applying the staples. This Is not correct. It is the location of the staples (probes) which is essential.

In response to previously presented arguments, the Examiner suggests in paragraph 15 that the construction claimed is "the same" as the prior art so that the

prior art will inherently carry out the method. However this is not correct as there is no disclosure in the prior art of the location of the staples, as set forth above.

Nor would such staples when placed at the locations remote from the conductors as would be expected, carry out the method steps.

It is submitted that there is no disclosure in the prior art of a probe engaged with the conductor to electrically connect to the conductor. There is no motivation in the prior art to use the staples of CDSS to engage into the conductors and also it is NOT a construction which is a consequence (accidental or otherwise) of combining Stewart and CDSS.

It is the analysis of these matters by the Applicant which has lead to the use of a system which uses **both** a plurality of pairs of probes and longitudinal exposed conductors which provides useful information to the system, contrary to the assertion of the Examiner that the system will not work.

With regard to the Prior art of Rosenau (4259633) now considered by the Examiner but not yet cited under 35 U.S.C. 102 or 102, the Examiner has mentioned this prior art in passing in the Advisory Action. This discloses stainless steel pins 28 and 30 which are driven into the wood to measure moisture content. However these pins are not associated with longitudinally extending conductors. These pins are not arranged in a plurality of pairs. If one were to use the tape of the prior art and the probes of the prior art in combination, the skilled person would simply provide **separate measure** of each component of moisture measurement. The present inventors have realized for the first time in a manner not suggested in any prior art document that parallel simultaneous measurement of the moisture in the tape

and the moisture across the probes is possible and will provide valuable information on the total moisture content.

It is submitted that the **Claims 12 and 21** presented herein are in good order for allowance.

Turning now to **Claim 27**, this claim does not include the probes of Claims 12 and 21. However the claim does include the following features:

"***a tape formed by a substrate of dielectric, hydrophobic material, a layer of a mounting adhesive on a bottom surface of the substrate and a first and a second spaced apart, elongate, parallel conductors mounted on a top surface of the substrate and extending therealong;***

wherein the first and second conductors of the tape are covered along the tape by a protective layer of non-hygroscopic, water pervious, dielectric material secured to the top surface of the substrate and extending over the conductors"

The first feature makes clear that the conductors are **on top** of the substrate (on the side opposite the adhesive) and NOT within the substrate or on the underside. And that the substrate is **hydrophobic**.

The second feature provides a ***water pervious*** layer as defined extending along the tape. That is **not** a non-permeable material.

In rejecting this claim the Examiner has cited Stewart. It was previously argued that:

a) in Stewart in Figures 1, 2 and 3 the conductors are **not on top of the tape but are within the body**.

Stewart refers to the carbon fiber conductors being embedded in permeable adhesive insulation 2 (see page 3, line 4). Thus the fibers are embedded in the insulation not on top and the insulation (substrate) is not hydrophobic. In Figure 6 no clear construction is illustrated. It appears that the fibers are embedded in a layer but this is not clear. In the absence of a clear disclosure, it cannot be concluded that Stewart discloses this feature. The Examiner has simply not addressed this argument and has pointed to no disclosure in Stewart which provide this feature.

b) In Stewart there is no disclosure that ***the first and second conductors of the tape are covered along the tape by a protective layer of non-hygroscopic, water pervious, dielectric material secured to the top surface of the substrate and extending over the conductors.***

The question is whether Stewart discloses a ***water pervious*** layer as defined extending along the tape. In response to this argument the Examiner states in paragraph 17 that "***Stewart teaches permeable insulation 5 or non-permeable insulation 8*** **, which seems to cover both possibilities as claimed**".

It is submitted that a proper analysis of this matter requires careful attention to **exactly** what is disclosed in Stewart by carefully reviewing the drawings and the text exactly as set forth. The expression "***seems to***" as used by the Examiner indicates that such an analysis has not been made. It is not sufficient to point in the prior art to statements where an indication is made that permeable or non-permeable insulation can be used without analyzing where and how this insulation is used.

This expression refers to two separate components of the structure of

Stewart that is the "***permeable insulation 5***" and the "***non-permeable insulation 8***".

The layer 8 in Figure 6 appears to form merely a small piece between the tape and an adjacent element 9. Thus the layer 8 referred to by the Examiner is not permeable and does not extend along the tape. The layer 8 therefore cannot constitute the element defined in the claim.

The only component of Stewart which could therefore constitute the element as defined is "permeable insulation 5". The disclosure of Stewart is unfortunately very difficult to understand to the extent that no enabling disclosure is provided. In Figure 1 it is clear that the tape 3 is defined by adhesive 2 and embedded conductors 1. In these figures it is clear that permeable insulation 5 does NOT extend along the tape or cover the conductors. Item 5 is shown in Figures 2, 3 and 6 but what it refers to is not clear. In Figure 6 it is fully clear that, whatever item 5 is, it does not extend along the tape and it does not cover the conductors.

On page 3, line 10 the expression referred to by the Examiner is used but this refers only to "***extension loops***".

On page 3, line 23 the item is referred to again but this refers only to "***points of positional change***".

Thus Stewart fails to disclose the combination of features set forth in a) and b) above.

The Examiner makes no allegation that these features are shown in any other document. In fact neither Gott nor CDSS disclose these features not in any way suggest that they should be used in combination with Stewart.

Thus there is no prior art or combination of prior art which shows the

combination set forth above so that new Claim 27 is not shown in nor obvious from the prior art cited.

In the Advisory Action, the Examiner states that the disclosure of Stewart is not difficult to understand in that it clearly discloses both "additional permeable insulation 5" and "permeable adhesive insulation 2". The Examiner then suggests that Gott discloses the construction of the substrate.

The examiner appears to be taking the position that the mere existence in the prior art of the various components is sufficient to establish a rejection under 35 U.S.C. 103 of a specific arrangement of those components. That is any invention can be rejected under 35 U.S.C. 103 if the components are all known. Clearly this is contrary to established practice. It is submitted that, in order to sustain a rejection under 35 U.S.C. 103, each prior art document of the combination must be analyzed carefully to determine the specific arrangement and location of the components concerned so that the specific teaching can be determined. Only then can an analysis be made of the teaching of any combination obvious to a person skilled in the art.

In other words, the rejection of the Examiner is based merely on the analysis that Gott shows a substrate and conductors. Stewart mentions the existence of the materials and hence the positioning of the material in the specific locations defined in the claims must be obvious. However Stewart, as set forth above does not disclose the location of the materials and hence fails even in combination with Gott to disclose the invention as claimed.

It is submitted that the claims presented herein are in good order for

allowance. The Examiner is advised that a mere restatement of the rejections previously presented based on the same prior art will lead to the filing of an Appeal.

Respectfully submitted

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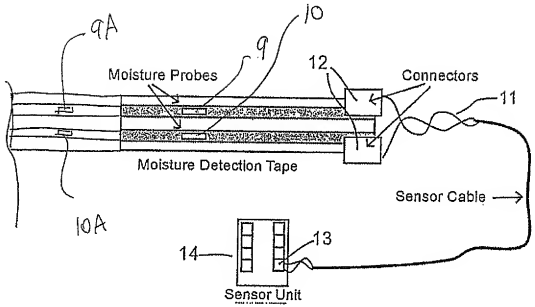
9A
10
9
12
Moisture Probes
Connectors
11
Moisture Detection Tape
Sensor Cable
10A
13
14
Sensor Unit

FIG. 6